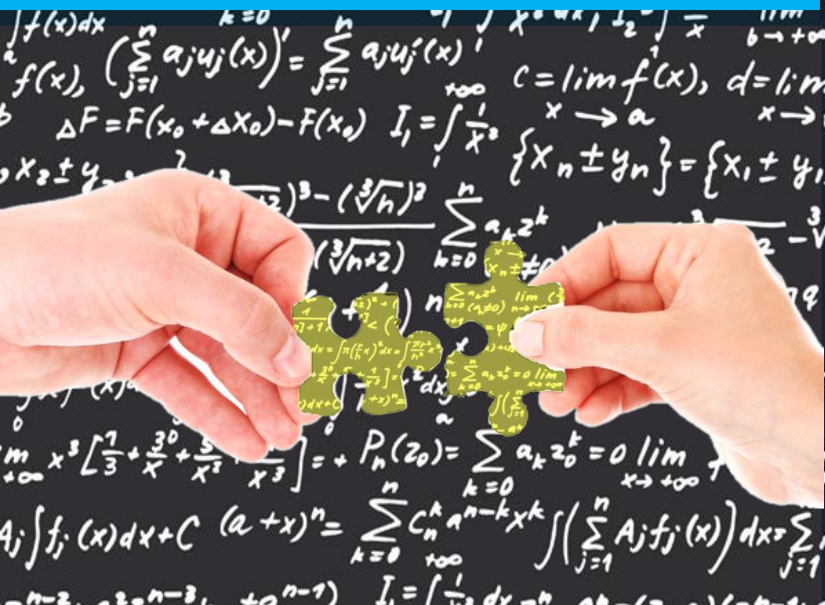




# Farmer suicides in India and the weather god



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## **Farmer suicides in India and the weather god**

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## **Abstract**

This paper examines the reasons for farmer suicides in India. Inability to get the right price, crop failures, and insurmountable debt are the factors that may drive the farmers to take this extreme step. A key factor for farmers being unable to get market prices is inefficient agriculture supply chain management. We find that the reasons for inefficient supply chain management include lack of reforms in the Agricultural Produce Market Committee (APMC) Act, low bargaining power due to small farm size, and lack of warehousing facilities. Crop failures happen because of poor irrigation facilities. Considering agricultural output and rainfall data from four different states in India we find evidence in favor of association between the cyclical component of agricultural output and rainfall data. Understanding this linkage is important from the perspective of formulating demand management policies (read, intervention by the government and central bank).

**Key Words:** Agriculture output, Beveridge-Nelson Decomposition, APMC Act, Rainfall, India.

**JEL Classification:** C50, E31, E32.

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# 1. Introduction

70 per cent of India's population rely on agriculture or related informal sector support.<sup>1</sup> Between 2012 and 2015 over 3000 farmers committed suicides in India. Farmer suicides are therefore a major cause of political contention, despite the fact that they have always occurred and the factors driving these deaths are sometime outside the control of policymakers, including crop failures, inability to get the right price, and insurmountable debt. Nevertheless, when large numbers of suicides occur, it generates heated political debate. The ruling party typically defends its interventions such as farm loan waiver schemes, higher minimum support price (MSP), fertilizer subsidies, and tax free agricultural income, while the opposition parties criticise the government for not doing enough on the ground.

During the fiscal year 2013-2014, contribution of the agricultural and agriculture related allied activities was only 14 per cent of the Gross Domestic Product (GDP), despite providing the livelihood of around 70 per cent of the population (Central Statistical Organization, Government of India, 2014).<sup>2</sup> Some 850 million people still live in rural India. India has around 260 million people living in poverty and 80 per cent of them live in the countryside (World Bank, 2016).

Not only per-capita agricultural income is low, and but at times it is not possible to sustain this low income. Also, agricultural output fluctuates far more than the outputs of the industrial and services sectors. Official output data shows that during the period between 1991-1992 and 2013-2014, the coefficient of variation for agricultural output is 191.34, in comparison to 50.48 for industry, and 22.03 for services sector (Central Statistical Organization, Government of India,

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<sup>1</sup> See: [http://indiainbusiness.nic.in/newdesign/index.php?param=economy\\_landing/213/2](http://indiainbusiness.nic.in/newdesign/index.php?param=economy_landing/213/2). Accessed on 09/04/2015.

<sup>2</sup> Year refers to the fiscal year, starting from April for any particular year and ending on March, next year.

2014). This has led to unequal income distribution in India with rural-urban wage gap at 45 per cent in comparison to around 10 per cent for China and Indonesia.

Low and uncertain income are a key driver of farmers' suicides. While crop failures during bad rainfall years can be attributed to less than normal rainfall, a more constant driver of suicides is the low prices they achieve for their produce. Here the blame can squarely be attributed to inefficient agriculture supply chain management. While Dev (2009) attributes lacks of investment in rural infrastructures such as road connectivity (linking village markets to nearby wholesale market) and lack of cold storage facilities as factors prohibiting price discovery for agricultural produce, Kennedy and King (2014) find farmers' indebtedness resulting from crop failures and inability to sell, as reasons for suicides.

World Bank data shows only 35 per cent of India's agricultural land is irrigated (artificial application of water to land or soil).<sup>3</sup> This means the majority (65 per cent) of farming is rain-dependent, most of which happens just a few months over the summer. As Figure 1 shows, likelihood of a farmer committing suicide is more during bad-rain years. To have a meaningful comparison, we standardized rainfall and suicide data with respect to mean and variance, to make them unit free (read, std. rainfall and std. suicide).

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